

Serial No. 10/029,253  
Amdt. dated October 4, 2004  
Reply to Office Action of June 3, 2004

Docket No. K-0381

**Amendments to the Specification:**

*Please replace paragraph [0007] with the following new paragraph:*

The adaptive ARQ technique ~~bases~~ is based on an adaptive error correction technique: the number of the surplus data bits gradually increases during the retransmission process. In addition, the adaptive ARQ technique uses one of a "stop and wait", "go back N", and "selective repeat" protocol method, and a data packet having a length L includes n information bits and m tail bits.

*Please replace paragraph [0010] with the following new paragraph:*

There are four different types of hybrid ARQ system: (1) Hybrid ARQ type I system without code combining, (2) Hybrid ARQ type I system with code combining, (3) Hybrid ARQ type II system with full retransmission, and (4) Hybrid ARQ type II system with partial retransmission.

**(1) Hybrid ARQ Type I System Without Code Combining**

In this system, a transmitter adds a CRC code to a data packet and performs an error correction coding process before sending the packet. Then, a receiver performs a CRC inspection and requests to retransmit if any error exists. Thereafter, the transmitter resends a same packet, and the receiver decodes the retransmitted packet independently. This system is set as "working assumption" in current 3GPP standards.

**(2) Hybrid ARQ Type I System With Code Combining**

This system is similar to the Hybrid ARQ type I system shown above except that the receiver initially combines the originally transmitted packet with the retransmitted packet, and it decodes the combined packet. It requires an additional memory space, and the number of data bits representing a symbol for combining must be considered.

(3) Hybrid ARQ type II System With Full Retransmission

In this system, the sender transmits an incremental redundancy after sending a data packet.

(4) Hybrid ARQ Type II System With Partial Retransmission

This system is identical to the Hybrid ARQ type II system with full retransmission except that the re-transmitted data is only partially retransmitted and the size of the incremental redundancy is smaller than the size of the original data packet.

*Please replace paragraph [0013] with the following new paragraph:*

An object of the present invention is to provide a method of ~~providing a method of~~ setting an initial error value that depends on the number of retransmissions made for a rate-matching algorithm of a hybrid ARQ system.

*Please replace paragraph [0028] with the following new paragraph:*

FIG. 2 is a graphical presentation of how ~~the a~~ rate-matching algorithm 102 is invoked in a hybrid ARQ system in accordance with the present invention. It will be assumed that the size of the packet being retransmitted is identical to the size of the packet previously transmitted. As shown in FIG. 2, the initial value of the algorithm depends on the number of retransmissions made. FIG. 2 also illustrates other transport multiplexing chains 101 and 102.

*Please replace paragraph [0037] with the following new paragraph:*

In addition, since the method of setting an initial error value in accordance with the present invention ~~bases~~ is based on code combining, it can be further applied to any other application that uses the code combining.

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*Please replace paragraph [0039] with the following new paragraph:*

It will be apparent to those skilled in the art ~~than~~ that various modifications and variations can be made in the present invention. Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.